

REMARKS

Claims 1-6 are all the claims pending in the application.

Claim 3 has been rewritten in independent form to include all of the limitations of the claims from which it depends.

Claims 1, 2 and 4-6 as amended are directed to a cell substrate for optical use which comprises a resinous multi layer structure having the claimed characteristics. Support is found, for example, at page 1, line 5, at page 12, lines 14-16, and bridging pages 22-23 of the specification.

Reconsideration and review of the claims on the merits are respectfully requested.

Claim Rejections - 35 U.S.C. § 112

Claim 3 was rejected under 35 U.S.C. 112, first paragraph. The Examiner considered that the claimed transparent hard coat, included as a single or in a multilayer construct, is not based on an enabling disclosure.

Applicants respectfully traverse and request the Examiner to reconsider for the following reasons.

The specification at pages 7-8, bridging paragraph, describes that the easily peelable (bottom or surface) resin layer is preferably excellent in optical properties including transparency. This resin layer is formed by curing a coating into a cured film (see page 8, bottom paragraph). Moreover, the easily peelable resin layer serving especially as a hard coat layer and having a thickness of 0.1 μ m or larger is described at page 12, lines 1-5 of the

specification. Furthermore, the specification at pages 24-25, the bridging paragraph, describes that all the layers of the resin substrate are formed as transparent layers in the case where the resin substrate is required to transmit light as in cell substrates.

In view of the above, it is respectfully submitted that the specification provides clear written description support for the claimed transparent hard coat layer, and that a person of ordinary skill in the art reading the above-cited passages of the specification can readily make and use a resinous multi layer structure which comprises the claimed transparent hard coat layer.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. § 112, first paragraph. Furthermore, because claim 3 was not rejected over prior art, Applicants submit that claim 3 is now allowable.

Double Patenting

Claims 1-2 and 4-5 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claim 1 of U.S. Patent No. 6,500,518 (the '518 patent) to Sugawa et al.

The Examiner considered that the present claims differ only in the recitation of the surface roughness values of 0.8 nm, and 0.2 nm, or lower, whereas Claim 1 of the '518 patent includes the limitation of a "smooth surface". The Examiner views the roughness value of 0.8 nm as being inherent in the '518 patent since the same epoxy resin is being used. The Examiner also states that at col. 3, line 40, a surface roughness, Ra, value is taught within the range of 0.2

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micrometers [*sic* - 0.02 micrometers] or less, falling within Applicants' ranges of 0.8 nm, and 0.2 nm, or lower.

Applicants traverse the obviousness-type double-patenting rejection.

The subject matter of Claim 1 of the '518 patent does not render obvious each and every limitation of the present invention. Claim 1 of the '518 patent does not render obvious at least the requirement of a multilayer structure having a surface roughness, Ra, of 0.8 nm or lower on at least one side", as presently claimed. Although the Examiner points to the "smooth surface" of Claim 1 of the '518 patent, this does not necessarily teach or suggest the claimed Ra range of 0.8 nm or lower. As the Examiner recognizes, the '518 patent does not claim such a range. The examples of the '518 patent do not even measure surface roughness. Furthermore, there is a significant difference between achieving a "smooth surface" of around 0.02 micrometers or less (i.e., around 20 nm or less) and achieving an even lower Ra range of 0.8 nm or less. In addition, a difference in two orders of magnitude in Ra refutes the Examiner's assertion of inherency, notwithstanding that the same epoxy resin may have been used which says nothing about surface roughness.

Moreover, according to Example 1 of the present specification, when a substrate having a surface roughness Ra of 0.2 nm and 10 nm respectively (Ra of 0.8 or less on at least one side) was used as the liquid crystal cell substrate, no light leakage was observed. On the other hand, according to the Comparative Example, when a substrate having a surface roughness Ra of 15 nm on both sides was used as the liquid crystal cell substrate, light leakage was observed. The significance and effect of the surface roughness Ra of 0.8 nm or lower on at least one side

according to present invention are not expected from the '518 patent. Accordingly, the present invention is patentably distinct from the much broader range recited in the claims of the '518 patent.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the obviousness-type double patenting rejection.

Claim Rejections - 35 U.S.C. § 102 and §103

A. Claims 1-2 and 4-6 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,500,518 to Sugawa et al.

Particularly, the Examiner cited the '518 patent as disclosing an epoxy optical sheet having a thickness of 500 micrometers or less; where the sheet is epoxy (8), a multilayer structure with a smooth surface such as a roughness Ra of 0.02 micrometers or less; where the epoxy resin includes specific resins such as bisphenol A; and having a layer of a cured epoxy resin as a base layer.

Applicants respectfully traverse the rejection.

The '518 Patent fails to anticipate each and every element of Applicants' claimed invention. As previously emphasized, according to Example 1 of the present invention, when the substrate having the surface roughness Ra of 0.2 nm and 10 nm respectively (Ra of 0.8 or less on at least one side) was used as the liquid crystal cell substrate, no light leakage was observed. On the other hand, according to the Comparative Example, when the substrate having a surface

roughness Ra of 15 nm on both sides was used as the liquid crystal cell substrate, light leakage was observed.

The present invention is characterized in that when the surface roughness Ra of the substrate is 0.8 nm or lower on at least one side, and the substrate is used, for example, as a liquid crystal cell substrate, excellent optical properties can be obtained. The effect of the present invention is clear from the comparison between the Example and the Comparative Example.

The disclosure of the '518 patent does not anticipate the claimed cell substrate having a surface roughness Ra of 0.8 nm or lower on at least one side. Although there is a description of "0.02 μ m or less" at column 3, line 40 in the '518 patent, this description means that the surface roughness Ra is 0.02 μ m or less, which is equivalent to a surface roughness 25 fold that of the surface roughness Ra of 0.8 nm or lower as required by the present claims. This range fails to anticipate the much narrower claimed range and which has a specific significance as demonstrated in Applicants' specification. Accordingly, the present invention is neither anticipated nor obvious over the '518 patent, and withdrawal of the foregoing rejection under 35 U.S.C. § 102(e) is respectfully requested.

B. Claims 1-2 and 4-5 were rejected under 35 U.S.C. §102(e) as assertedly being anticipated by US Pat. No. 6,136,444 to Kon et al.

The Examiner cited Kon as teaching a multilayer resinous structure having a transparent plastic substrate of a thickness between 70 and 200 micrometers; where the transparent plastic

substrate has a surface roughness Ra of 1 nm or less; and a base cured epoxy layer (7) as a solvent-resistant radiation curing layer.

C. Claim 6 was rejected under 35 U.S.C. §103(a) as assertedly being unpatentable over US Pat. No. 6,136,444 to Kon et al. in view of US Pat. No. 6,261,664 to Beeson et al.

The Examiner recognized that Kon does not teach an epoxy of bisphenol A type. However, the Examiner relied on Beeson as teaching that a bisphenol epoxy is conventionally used in optical films.

Applicants respond as follows to the anticipation and obviousness rejections based on Kon et al above alone or in view of Beeson et al as follows.

Claims 1, 2 and 4-6, as amended, are directed to a cell substrate which comprises a resinous multi layer structure having a surface roughness Ra of 0.8 nm or lower on at least one side and having an average thickness of from 100 to 800 μ m. As mentioned above, this preferred embodiment of the invention is described, for example, at page 1, Field of the Invention, at page 12, lines 14-16, and bridging pages 22-23 of the specification.

Kon et al. does not illustrate the use of a cell substrate for optical use, and therefore, Kon et al. does not anticipate or render obvious the present invention alone or in combination with Beeson et al.

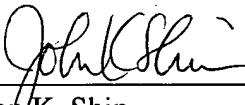
Accordingly, Applicants respectfully request reconsideration and withdrawal of the foregoing rejections under 35 U.S.C. § 102(e) and 35 U.S.C. § 103(a).

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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